Project: Conversational AI Chatbot

Objective: Create a prompt framework for developing a conversational AI chatbot that can engage users on various topics, provide information, and offer recommendations. This project focuses on crafting conversational prompts that maintain context and coherence.

Expected Outcome: A set of prompts that enable the chatbot to have meaningful conversations, demonstrating students' ability to guide AI in conversational contexts.

FrontEnd Code :

```
import { useState } from 'react';

import axios from 'axios';

function Chatbot() {

  const [messages, setMessages] = useState([]);

  const [input, setInput] = useState('');

  const sendMessage = async () => {

    if (!input.trim()) return;

    const newMessages = [...messages, { role: 'user', text: input }];

    setMessages(newMessages);

    setInput('');

    try {

      const res = await axios.post('http://localhost:5000/api/chat', {

        message: input,

        history: newMessages.map(m => ({ role: m.role, text: m.text }))

      });

      const botReply = res.data.reply;

      console.log("🤖 Bot says:", botReply);
```

```
      setMessages([...newMessages, { role: 'bot', text: botReply }]);
    } catch (err) {
      console.error("❌ Error from backend:", err);
      setMessages([...newMessages, { role: 'bot', text: 'Something went wrong!' }]);
    }
  };
  return (
    <div style={{ padding: 20 }}>
      <h2>💬 AI Chatbot</h2>
      <div style={{ marginBottom: 10 }}>
        {messages.map((msg, i) => (
          <p key={i} style={{ textAlign: msg.role === 'user' ? 'right' : 'left' }}>
            <b>{msg.role === 'user' ? 'You' : 'Bot'}:</b> {msg.text}
          </p>
        ))}
      </div>
<div style = {display :flex}>
      <input
        value={input} placeholder= “Type your message here”
        onChange={(e) => setInput(e.target.value)}
        onKeyDown={(e) => e.key === 'Enter' && sendMessage()}
        style={{ width: '70%', padding: 8 }}
      />
      <button onClick={sendMessage} style={{ padding: '8px 16px', marginLeft: 8  color : blue}}>
```

```
        Send
      </button>
</div>
    </div>
  );
}
export default Chatbot;
```

BackEnd Code ;

```
from flask import Flask, request, jsonify
from flask_cors import CORS
from chatbot_model import generate_reply
from db import conversations
app = Flask(__name__)
CORS(app)
@app.route('/api/chat', methods=['POST'])
def chat():
    user_msg = request.json.get("message")
    history = request.json.get("history", [])

    if not user_msg:
        return jsonify({"reply": "No message received."}), 400
    try:
        reply = generate_reply(user_msg, history)
        conversations.insert_one({"user": user_msg, "bot": reply})
        return jsonify({"reply": reply})
    except Exception as e:
```

```
        print("❌ BACKEND ERROR:", str(e))
        return jsonify({"reply": "Something went wrong!"}), 500
if __name__ == '__main__':
    app.run(debug=True)
```

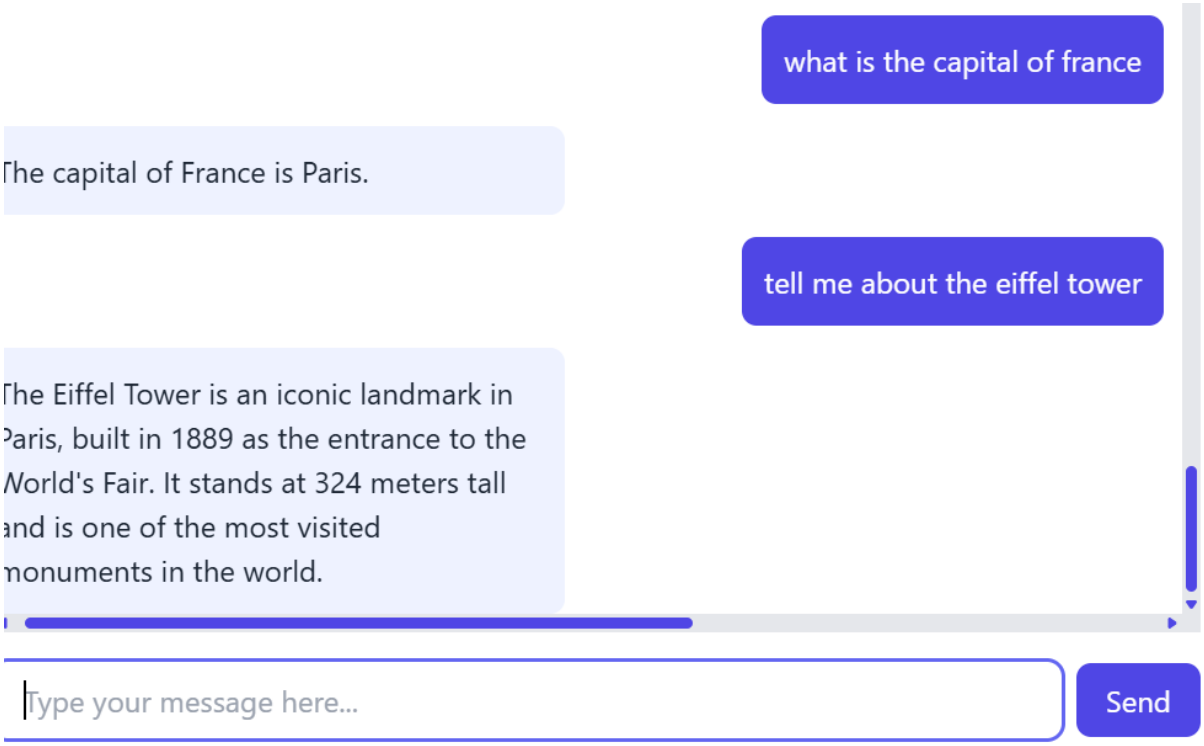
Chatbot_model.py :

```
import requests
def generate_reply(user_msg, history=[]):
    full_prompt = ""
    for msg in history:
        full_prompt += f"{msg['role'].capitalize()}: {msg['text']}\n"
    full_prompt += f"User: {user_msg}\nBot:"
    res = requests.post(
        "http://localhost:11434/api/generate",
        json={"model": "gemma:2b", "prompt": full_prompt, "stream": False}
    )
    return res.json()["response"]
```

db.py:

```
from pymongo import MongoClient
client = MongoClient("mongodb://localhost:27017/")
db = client.chatbotDB
conversations = db.conversations
```

Output:


what is the capital of france
The capital of France is Paris.
tell me about the eiffel tower
The Eiffel Tower is an iconic landmark in Paris, built in 1889 as the entrance to the World's Fair. It stands at 324 meters tall and is one of the most visited monuments in the world.
Type your message here...
Send